Set Name side by side	Query	Hit Count	Set Name result set
	DB USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR YES; OP AND		
L7	(coacervate) same (gelatin and alginate and virus)	1	L7
L6	L5 and (microsphere)	12	L6
L5	(coacervate or coacervation) same (DNA or vector or adenovirus or retrovirus)	21	L5
L4	L3 and ((viral adj vector) or (adenovirus) or (retrovirus))	31	L4
L3	L2 and (encapsulate or encapsulation)	112	L3
L2	(coacervates or coacervation) and (DNA or RNA or vector)	532	L2
L1	Garver-robert-I$.in.	3	L1

END OF SEARCH HISTORY

JOURNAL: Official Gazette [redacted] the United States Patent and T[redacted]demark Office Patents 1227 (4):pNo pagination Oct. 26, 1999
MEDIUM: e-file.
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

***Gene* *delivery* system.**

ABSTRACT: A *gene* *delivery* system is made of enzymatically degradable polymeric cation and nucleic acid (DNA or RNA) nanospheres optionally with a linking moiety or a targeting ligand attached to the surface. The delivery system can be made by a simple method of *coacervation*. Targeting ligands can be attached to the nanosphere directly or via a linking moiety. The linkage design allows the attachment of any molecule onto the...
METHODS & EQUIPMENT: *gene* *delivery* system...

?ds

Set	Items	Description
S1	30	(COACERVATE OR COACERVATION) (S) (ADENOVIRUS OR VECTOR OR - DNA OR RNA)
S2	3	S1 AND (MICROSPHERE)
S3	2	RD (unique items)
S4	17	RD S1 (unique items)
S5	5	(COACERVATE OR COACERVATION) (S) (VIRUS)
S6	2	RD (unique items)
S7	11	(GENE (W) DELIVERY) AND (COACERVATE OR COACERVATION)
S8	5	RD (unique items)

?logoff
27jun02 08:49:06 User259876 Session D361.2
$2.06 0.644 DialUnits File155
$2.94 14 Type(s) in Format 3
$2.94 14 Types
$5.00 Estimated cost File155
$3.53 0.630 DialUnits File5
$28.00 16 Type(s) in Format 3
$28.00 16 Types
$31.53 Estimated cost File5
$6.46 0.718 DialUnits File73
$22.50 9 Type(s) in Format 3
$22.50 9 Types
$28.96 Estimated cost File73
OneSearch, 3 files, 1.992 DialUnits FileOS
$1.73 TELNET
$67.22 Estimated cost this search
$67.61 Estimated total session cost 2.088 DialUnits

Status: Signed Off. (9 minutes)

Status: Path 1 of [Dialog Information Services via Modem]

Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
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Status: Signing onto Dialog
 ****
ENTER PASSWORD:
 ******** HHHHHHHH SSSSSSSS? ********
Welcome to DIALOG
Status: Connected

Dialog level 02.05.22D

Last logoff: 24jun02 08:35:06
Logon file001 27jun02 08:41:04
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HILIGHT set on as '*'

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Set	Items	Description

Cost is in DialUnits
?b 155, 5, 73
27jun02 08:41:21 User259876 Session D361.1
$0.34 0.096 DialUnits File1
$0.34 Estimated cost File1
$0.05 TELNET
$0.39 Estimated cost this search
$0.39 Estimated total session cost 0.096 DialUnits

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File 5:Biosis Previews(R) 1969-2002/Jun W4
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File 73:EMBASE 1974-2002/Jun W3
(c) 2002 Elsevier Science B.V.
***File 73: For information about Explode feature please**
see Help News73.

Set	Items	Description
		?s (coacervate or coacervation) (s) (adenovirus or vector or DNA or RNA)
	437	COACERVATE
	775	COACERVATION
	57340	ADENOVIRUS
	188254	VECTOR
	1768913	DNA
	936003	RNA
S1	30	(COACERVATE OR COACERVATION) (S) (ADENOVIRUS OR VECTOR OR DNA OR RNA)

?s s1 and (microsphere)
30 S1
18325 MICROSPHERE
S2 3 S1 AND (MICROSPHERE)
?rd
...completed examining records
S3 2 RD (unique items)
?t s3/3,k/all

3/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10233054 99210253 PMID: 10195878
Coacervate microspheres as carriers of recombinant adenoviruses.
Kalyanasundaram S; Feinstein S; Nicholson J P; Leong K W; Garver R I
Department of Biomedical Engineering, Johns Hopkins University, Baltimore, Maryland 21205, USA.
Cancer gene therapy (UNITED STATES) Mar-Apr 1999, 6 (2) p107-12, ISSN 0929-1903 Journal Code: 9432230
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

...for bolus administration, both of which limit the efficiency of target tissue infection. As a first step toward overcoming these limitations, rAds were encapsulated in *coacervate* microspheres comprised of gelatin and alginate followed by stabilization with calcium ions. Ultrastructural evaluation showed that the microspheres formed in this manner were 0.8-10 microM in diameter, with viruses evenly distributed. The microspheres achieved a sustained release of *adenovirus* with a nominal loss of bioactivity. The pattern of release and the total amount of virus released was modified by changes in *microsphere* formulation. Administration of the *adenovirus* -containing microspheres to human tumor nodules engrafted in mice showed that the viral transgene was transferred to the tumor cells. It is concluded that *coacervate* microspheres can be used to encapsulate bioactive rAd and release it in a time-dependent manner.

3/3,K/2 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

05690731 EMBASE No: 1994095476
Gelatin microspheres as a new approach for the controlled delivery of synthetic oligonucleotides and PCR-generated DNA fragments
Cortesi R.; Esposito E.; Menegatti E.; Gambari R.; Nastruzzi C.
Department Pharmaceutical Sciences, Ferrara University, Via Fossato di Mortara 19,I-44100 Ferrara Italy
International Journal of Pharmaceutics (INT. J. PHARM.) (Netherlands) 1994, 105/2 (181-186)
CODEN: IJPHD ISSN: 0378-5173
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...length, prepared by the polymerase chain reaction (PCR) mimicking a region of the HIV-1 LTR (dsDNA-144). Spherical gelatin microspheres were obtained by a *coacervation* method, showing a high percentage of encapsulation yields (over 85%). Size distribution analysis of the microspheres produced resulted in an average diameter of 22 mum...

...a flow-through cell method. The chemical stability of dsDNA-144 to the encapsulation procedure steps was in addition demonstrated by PCR amplification of the *DNA* eluted from the gelatin microspheres. The reported results indicate that gelatin-based microspheres offer excellent potential as carrier systems for the in vivo administration of both single-

and double-stranded *DNA* [redacted]olecules.
DRUG DESCRIPTORS:
**microsphere*; *dna; *oligonucleotide--pharmaceutics--pr
?ds

Set	Items	Description
S1	30	(COACERVATE OR COACERVATION) (S) (ADENOVIRUS OR VECTOR OR - DNA OR RNA)
S2	3	S1 AND (MICROSPHERE)
S3	2	RD (unique items)

?rd s1
...completed examining records
S4 17 RD S1 (unique items)
?t s1/3,k/all

1/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11098813 21111983 PMID: 11182210
Chitosan-DNA nanoparticles as gene carriers: synthesis, characterization and transfection efficiency.
Mao H Q; Roy K; Troung-Le V L; Janes K A; Lin K Y; Wang Y; August J T; Leong K W
Department of Biomedical Engineering, The Johns Hopkins University School of Medicine, 726 Ross Building, 720 Rutland Avenue, Baltimore, MD 21205, USA. hmao@jhs.com.sg
Journal of controlled release : official journal of the Controlled Release Society (Netherlands) Feb 23 2001, 70 (3) p399-421, ISSN 0168-3659 Journal Code: 8607908
Contract/Grant No.: CA68011; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Chitosan-*DNA* nanoparticles were prepared using a complex *coacervation* process. The important parameters for the nanoparticle synthesis were investigated, including the concentrations of *DNA*, chitosan and sodium sulfate, temperature of the solutions, pH of the buffer, and molecular weights of chitosan and *DNA*. At an amino group to phosphate group ratio (N/P ratio) between 3 and 8 and a chitosan concentration of 100 microg/ml, the size of particles was optimized to approximately 100--250 nm with a narrow distribution, with a composition of 35.6 and 64.4% by weight for *DNA* and chitosan, respectively. The surface charge of these particles was slightly positive with a zeta potential of +12 to +18 mV at pH lower than 6.0, and became nearly neutral at pH 7.2. The chitosan-*DNA* nanoparticles could partially protect the encapsulated plasmid *DNA* from nuclease degradation as shown by electrophoretic mobility analysis. The transfection efficiency of chitosan-*DNA* nanoparticles was cell-type dependent. Typically, it was three to four orders of magnitude, in relative light units, higher than background level in HEK293 cells, and two to ten times lower than that achieved by LipofectAMINE-*DNA* complexes. The presence of 10% fetal bovine serum did not interfere with their transfection ability. Chloroquine could be co-encapsulated in the nanoparticles at 5...

1/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10705486 20239433 PMID: 10779162
Antigen-specific induction of peripheral T cell tolerance in vivo by codelivery of DNA vectors encoding antigen and Fas ligand.
Georgantas R W; Leong K W; August J T
Department of Pharmacology and Molecular Science, Johns Hopkins School of Medicine, Baltimore, MD 21205, USA.
Human gene therapy (UNITED STATES) Apr 10 2000, 11 (6) p851-8,

ISSN 1043-0342 Journal Code: 9008950
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... FasL within individual antigen-presenting cells would lead to antigen-specific activation of T cells and to their consequent deletion by FasL-mediated AICD. A *DNA*-gelatin *coacervate* containing transferrin cell ligand, calcium, and the lysosomatropic agent chloroquine, a formulation previously shown to achieve high-level transfection of immune and muscle cells in vivo, was used to codeliver plasmids encoding FasL and antigen. Mice developed a strong cytolytic T cell response to beta-Gal when injected with *DNA* encoding beta-galactosidase (LacZ) model antigen, either as naked *DNA* or *DNA* nanoparticles, but failed to respond when there was concomitant injection of nanoparticles containing both the LacZ and murine FasL *DNA* vectors. This loss of T cell response was systemic, specific for beta-Gal, complete when nanoparticles were administered before antigen challenge, and decreased the T cell response from prior immunization with LacZ *DNA* . In effect, this "tolerization" injection induced antigen-specific peripheral tolerance in study mice, and represents a possible approach to the treatment of autoimmune diseases and...

1/3,K/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10233054 99210253 PMID: 10195878
Coacervate microspheres as carriers of recombinant adenoviruses.
Kalyanasundaram S; Feinstein S; Nicholson J P; Leong K W; Garver R I
Department of Biomedical Engineering, Johns Hopkins University, Baltimore, Maryland 21205, USA.
Cancer gene therapy (UNITED STATES) Mar-Apr 1999, 6 (2) p107-12, ISSN 0929-1903 Journal Code: 9432230
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

...for bolus administration, both of which limit the efficiency of target tissue infection. As a first step toward overcoming these limitations, rAds were encapsulated in *coacervate* microspheres comprised of gelatin and alginate followed by stabilization with calcium ions. Ultrastructural evaluation showed that the microspheres formed in this manner were 0.8-10 microM in diameter, with viruses evenly distributed. The microspheres achieved a sustained release of *adenovirus* with a nominal loss of bioactivity. The pattern of release and the total amount of virus released was modified by changes in microsphere formulation. Administration of the *adenovirus* -containing microspheres to human tumor nodules engrafted in mice showed that the viral transgene was transferred to the tumor cells. It is concluded that *coacervate* microspheres can be used to encapsulate bioactive rAd and release it in a time-dependent manner.

1/3,K/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10106534 99102035 PMID: 9882427
Gene transfer by DNA-gelatin nanospheres.
Truong-Le V L; Walsh S M; Schweibert E; Mao H Q; Guggino W B; August J T; Leong K W
Department of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine, Baltimore, Maryland, 21205, USA.
Archives of biochemistry and biophysics (UNITED STATES) Jan 1 1999, 361 (1) p47-56, ISSN 0003-9861 Journal Code: 0372430
Contract/Grant No.: 1 RO1 A141908; PHS; CA 68011; CA; NCI

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A *DNA* and gelatin nanoparticle *coacervate* containing chloroquine and calcium, and with the cell ligand transferrin covalently bound to the gelatin, has been developed as a gene delivery vehicle. In this study, the *coacervation* conditions which resulted in the formation of distinct nanoparticles are defined. Nanospheres formed within a narrow range of *DNA* concentrations and achieved incorporation of more than 98% of the *DNA* in the reaction. Crosslinking of gelatin to stabilize the particles does not effect the electrophoretic mobility of the *DNA*. *DNA* in the nanosphere is partially resistant to digestion with concentrations of DNase I that result in extensive degradation of free *DNA* but is completely degraded by high concentrations of DNase. Optimum cell transfection by nanosphere *DNA* required the presence of calcium and nanospheres containing transferrin. The biological integrity of the nanosphere *DNA* was demonstrated with a model system utilizing *DNA* encoding the cystic fibrosis transport regulator (CFTR). Transfection of cultured human tracheal epithelial cells (9HTEo) with nanospheres containing this plasmid resulted in CFTR expression in...

1/3,K/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09999784 98412957 PMID: 9741926
DNA-polycation nanospheres as non-viral gene delivery vehicles.
Leong K W; Mao H Q; Truong-Le V L; Roy K; Walsh S M; August J T
Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD 21205, USA. kleong@bme.jhu.edu
Journal of controlled release : official journal of the Controlled Release Society (NETHERLANDS) Apr 30 1998, 53 (1-3) p183-93, ISSN 0168-3659 Journal Code: 8607908
Contract/Grant No.: CA68011; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Nanospheres synthesized by salt-induced complex *coacervation* of cDNA and polycations such as gelatin and chitosan were evaluated as gene delivery vehicles. *DNA*-nanospheres in the size range of 200-750 nm could transfect a variety of cell lines. Although the transfection efficiency of the nanospheres was typically...

...phosphate controls in cell culture, the beta-gal expression in muscle of BALB/c mice was higher and more sustained than that achieved by naked *DNA* and lipofectamine complexes. This gene delivery system has several attractive features: (1) ligands can be conjugated to the nanosphere for targeting or stimulating receptor-mediated endocytosis; (2) lysosomolytic agents can be incorporated to reduce degradation of the *DNA* in the endosomal and lysosomal compartments; (3) other bioactive agents or multiple plasmids can be co-encapsulated; (4) bioavailability of the *DNA* can be improved because of protection from serum nuclease degradation by the polymeric matrix; (5) the nanosphere can be lyophilized for storage without loss of...

1/3,K/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09960721 98386035 PMID: 9721081
Controlled gene delivery by DNA-gelatin nanospheres.
Truong-Le V L; August J T; Leong K W

Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205, USA.
Human gene therapy (UNITED STATES) Aug 10 1998, 9 (12) p1709-17, ISSN 1043-0342 Journal Code: 9008950
Contract/Grant No.: 1-ROI-AI41908; AI; NIAID; AI42718; AI; NIAID; P50 CA62924; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A novel system for gene delivery, based on the use of *DNA*-gelatin nanoparticles (nanospheres) formed by salt-induced complex *coacervation* of gelatin and plasmid *DNA*, has been developed. These particles were spherical, with a size range of 200-700 nm, contained 25-30% (w/w) *DNA*, and were stabilized by cross-linking of gelatin. As a consequence of being controlled by the cross-linking density of the gelatin matrix, the average release rate of *DNA* from nanospheres synthesized under standard conditions was 2.2%/day in serum. Nanosphere *DNA* incubated in bovine serum was more resistant to nuclease digestion than was naked *DNA*. Various bioactive agents could be encapsulated in the nanospheres by ionic interaction with the matrix components, physical entrapment, or covalent conjugation. Transfection of cultured cells...

... nanospheres containing 1 microg of a beta-galactosidase plasmid was greater and more prolonged than was observed after injection of an equal amount of naked *DNA* or *DNA* complexed with Lipofectamine.

1/3,K/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05961639 89048232 PMID: 3189780
Use of critical point polyacrylamide sols in thermal denaturation experiments with chromatin at physiological ionic strength.
Riehm M R; Harrington R E
Department of Biochemistry, University of Nevada, Reno 89557.
Analytical biochemistry (UNITED STATES) Aug 1 1988, 172 (2) p296-303, ISSN 0003-2697 Journal Code: 0370535
Contract/Grant No.: GM 33435; GM; NIGMS; T32 CA 09563; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... liter-1, by mild heating. We find that chromatin samples mixed with these sols induce the sol to gel transition in a process of complex *coacervation*. In this state, salt insoluble chicken erythrocyte chromatin is stabilized against large scale aggregation and precipitation during thermal denaturation at physiological sodium ion concentrations. The hyperchromic melting behavior of *DNA* in polyacrylamide sols is reproducible and consistent throughout a wide range of sodium chloride concentrations. Empirical spectroscopic techniques are discussed which isolate temperature-dependent hyperchromic signals at 260 nm due to conformational changes of *DNA* in chromatin and local environmental changes which promote anomalous light scattering.

1/3,K/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04588754 84271794 PMID: 6462688
Present state of the coacervate-in-coacervate theory; origin and evolution of cell structure.
Novak V J
Origins of life (NETHERLANDS) 1984, 14 (1-4) p513-22, ISSN

0302-1688 Journal Code: [redacted]20542
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

In agreement with the views of Oparin, Fox, Dose etc., the theory assumes that *coacervation* of protein-like polyaminoacids began with their accumulation along the coasts of the Archaic water basins. Unlike the above authors, however, the present author views...

... on the basis of their mutual affinity. The polyfunctional enzymic activity of the proteinoids catalyzed their replication as well as other activities. Around the replicating *DNA* molecules secondary coacervates (coacervates in coacervates) accumulated which developed gradually to the first prokaryotic cells. Their most probable evolution to the first eukaryotic organisms is...

1/3,K/9 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13018727 BIOSIS NO.: 200100225876
Chitosan-DNA nanoparticles as gene carriers: Synthesis, characterization and transfection efficiency.
AUTHOR: Mao Hai-Quan(a); Roy Krishnendu; Troung-Le Vu L; Janes Kevin A; Lin Kevin Y; Wang Yan; August J Thomas; Leong Kam W
AUTHOR ADDRESS: (a)Johns Hopkins Singapore, 10 Medical Drive, Singapore, 117597: hmao@jhs.com.sg, kleong@bme.jhu.edu**Singapore
JOURNAL: Journal of Controlled Release 70 (3):p399-421 23 February, 2001
MEDIUM: print
ISSN: 0168-3659
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Chitosan-*DNA* nanoparticles were prepared using a complex *coacervation* process. The important parameters for the nanoparticle synthesis were investigated, including the concentrations of *DNA*, chitosan and sodium sulfate, temperature of the solutions, pH of the buffer, and molecular weights of chitosan and *DNA*. At an amino group to phosphate group ratio (N/P ratio) between 3 and 8 and a chitosan concentration of 100 mug/ml, the size of particles was optimized to apprx100-250 nm with a narrow distribution, with a composition of 35.6 and 64.4% by weight for *DNA* and chitosan, respectively. The surface charge of these particles was slightly positive with a zeta potential of + 12 to + 18 mV at pH lower than 6.0, and became nearly neutral at pH 7.2. The chitosan-*DNA* nanoparticles could partially protect the encapsulated plasmid *DNA* from nuclease degradation as shown by electrophoretic mobility analysis. The transfection efficiency of chitosan-*DNA* nanoparticles was cell-type dependent. Typically, it was three to four orders of magnitude, in relative light units, higher than background level in HEK293 cells, and two to ten times lower than that achieved by LipofectAMINETM-*DNA* complexes. The presence of 10% fetal bovine serum did not interfere with their transfection ability. Chloroquine could be co-encapsulated in the nanoparticles at 5...

1/3,K/10 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12525401 BIOSIS NO.: 200000278903
Gene delivery system.

AUTHOR: Roy Krishnendu(a) [redacted]ac Hai-Quan; Truong Vu L; Augu[redacted]Thomas; Leong Kam W
AUTHOR ADDRESS: (a)Ellicot City, MD**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1227 (4):pNo pagination Oct. 26, 1999
MEDIUM: e-file.
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A gene delivery system is made of enzymatically degradable polymeric cation and nucleic acid (*DNA* or *RNA*) nanospheres optionally with a linking moiety or a targeting ligand attached to the surface. The delivery system can be made by a simple method of *coacervation*. Targeting ligands can be attached to the nanosphere directly or via a linking moiety. The linkage design allows the attachment of any molecule onto the...

1/3,K/11 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

12481942 BIOSIS NO.: 200000235444
Antigen-specific induction of peripheral T cell tolerance in vivo by codelivery of DNA vectors encoding antigen and Fas ligand.
AUTHOR: Georgantas Robert W III(a); Leong Kam W; August J Thomas
AUTHOR ADDRESS: (a)725 North Wolfe Street, Room 311, Biophysics Building, Baltimore, MD, 21205**USA
JOURNAL: Human Gene Therapy 11 (6):p851-858 April 10, 2000
ISSN: 1043-0342
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

...ABSTRACT: FasL within individual antigen-presenting cells would lead to antigen-specific activation of T cells and to their consequent deletion by FasL-mediated AICD. A *DNA*-gelatin *coacervate* containing transferrin cell ligand, calcium, and the lysosomatropic agent chloroquine, a formulation previously shown to achieve high-level transfection of immune and muscle cells in vivo, was used to codeliver plasmids encoding FasL and antigen. Mice developed a strong cytolytic T cell response to beta-Gal when injected with *DNA* encoding beta-galactosidase (LacZ) model antigen, either as naked *DNA* or *DNA* nanoparticles, but failed to respond when there was concomitant injection of nanoparticles containing both the LacZ and murine FasL *DNA* vectors. This loss of T cell response was systemic, specific for beta-Gal, complete when nonoparticles were administered before antigen challenge, and decreased the T cell response from prior immunization with LacZ *DNA* . In effect, this "tolerization" injection induced antigen-specific peripheral tolerance in study mice, and represents a possible approach to the treatment of autoimmune diseases and...
METHODS & EQUIPMENT: *DNA*-gelatin *coacervate*--*DNA* transfer method, *vector*;

1/3,K/12 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

11957848 BIOSIS NO.: 199900203957
Coacervate microspheres as carriers of recombinant adenoviruses.
AUTHOR: Kalyanasundaram Subramanian; Feinstein Sharon; Nicholson Jennifer P ; Leong Kam W; Garver Robert I Jr (a)

AUTHOR ADDRESS: (a)701 S[redacted] 19th Street, LHRB 339, Birmin[redacted]am, AL, 35294**
USA
JOURNAL: Cancer Gene Therapy 6 (2):p107-112 March-April, 1999
ISSN: 0929-1903
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

...ABSTRACT: for bolus administration, both of which limit the efficiency of target tissue infection. As a first step toward overcoming these limitations, rAds were encapsulated in *coacervate* microspheres comprised of gelatin and alginate followed by stabilization with calcium ions. Ultrastructural evaluation showed that the microspheres formed in this manner were 0.8-10 muM in diameter, with viruses evenly distributed. The microspheres achieved a sustained release of *adenovirus* with a nominal loss of bioactivity. The pattern of release and the total amount of virus released was modified by changes in microsphere formulation. Administration of the *adenovirus*-containing microspheres to human tumor nodules engrafted in mice showed that the viral transgene was transferred to the tumor cells. It is concluded that *coacervate* microspheres can be used to encapsulate bioactive rAd and release it in a time-dependent manner.
...METHODS & EQUIPMENT: *coacervate* microspheres...

...encapsulated adenoviral carrier, pharmacological method, microbial method, gene *vector* carrier method

1/3,K/13 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11840735 BIOSIS NO.: 199900086844
Gene transfer by DNA-gelatin nanospheres.
AUTHOR: Truong-Le Vu L; Walsh Scott M; Schweibert Erik; Mao Hai-Quan; Guggino William B; August J Thomas(a); Leong Kam W
AUTHOR ADDRESS: (a)Dep. Pharmacol. Molecular Sci., Johns Hopkins Sch. Med., Baltimore, MD 201205**USA
JOURNAL: Archives of Biochemistry and Biophysics 361 (1):p47-56 Jan. 1, 1999
ISSN: 0003-9861
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A *DNA* and gelatin nanoparticle *coacervate* containing chloroquine and calcium, and with the cell ligand transferrin covalently bound to the gelatin, has been developed as a gene delivery vehicle. In this study, the *coacervation* conditions which resulted in the formation of distinct nanoparticles are defined. Nanospheres formed within a narrow range of *DNA* concentrations and achieved incorporation of more than 98% of the *DNA* in the reaction. Crosslinking of gelatin to stabilize the particles does not effect the electrophoretic mobility of the *DNA*. *DNA* in the nanosphere is partially resistant to digestion with concentrations of DNase I that result in extensive degradation of free *DNA* but is completely degraded by high concentrations of DNase. Optimum cell transfection by nanosphere *DNA* required the presence of calcium and nanospheres containing transferrin. The biological integrity of the nanosphere *DNA* was demonstrated with a model system utilizing *DNA* encoding the cystic fibrosis transport regulator (CFTR). Transfection of cultured human tracheal epithelial cells (9HTEo) with nanospheres containing this plasmid resulted in CFTR expression in...

1/3,K/14 (Item 6 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

11656641 BIOSIS NO.: 199800438372
Controlled gene delivery by DNA-gelatin nanospheres.
AUTHOR: Truong-Le Vu L; August J Thomas; Leong Kam W(a)
AUTHOR ADDRESS: (a)Dep. Biomed. Eng., Johns Hopkins Univ. Sch. Med., 725 N. Wolfe St., Baltimore, MD 21205**USA
JOURNAL: Human Gene Therapy 9 (12):p1709-1717 Aug. 10, 1998
ISSN: 1043-0342
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A novel system for gene delivery, based on the use of *DNA* -gelatin nanoparticles (nanospheres) formed by salt-induced complex *coacervation* of gelatin and plasmid *DNA*, has been developed. These particles were spherical, with a size range of 200-700 nm, contained 25-30% (w/w) *DNA*, and were stabilized by cross-linking of gelatin. As a consequence of being controlled by the cross-linking density of the gelatin matrix, the average release rate of *DNA* from nanospheres synthesized under standard conditions was 2.2%/day in serum. Nanosphere *DNA* incubated in bovine serum was more resistant to nuclease digestion than was naked *DNA*. Various bioactive agents could be encapsulated in the nanospheres by ionic interaction with the matrix components, physical entrapment, or covalent conjugation. Transfection of cultured cells...

...nanospheres containing 1 mug of a beta-galactosidase plasmid was greater and more prolonged than was observed after injection of an equal amount of naked *DNA* or *DNA* complexed with Lipofectamine.

1/3,K/15 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

11494732 BIOSIS NO.: 199800276064
DNA-polycation nanospheres as non-viral gene delivery vehicles.
AUTHOR: Leong K W(a); Mao H-Q; Truong-Le V L; Roy K; Walsh S M; August J T
AUTHOR ADDRESS: (a)Dep. Biomed. Eng., 726 Ross, Johns Hopkins Univ., Baltimore, MD 21205**USA
JOURNAL: Journal of Controlled Release 53 (1-3):p183-193 April 30, 1998
ISSN: 0168-3659
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Nanospheres synthesized by salt-induced complex *coacervation* of cDNA and polycations such as gelatin and chitosan were evaluated as gene delivery vehicles. *DNA*-nanospheres in the size range of 200-750 nm could transfect a variety of cell lines. Although the transfection efficiency of the nanospheres was typically...

...phosphate controls in cell culture, the beta-gal expression in muscle of BALB/c mice was higher and more sustained than that achieved by naked *DNA* and lipofectamine complexes. This gene delivery system has several attractive features: (1) ligands can be conjugated to the nanosphere for targeting or stimulating receptor-mediated endocytosis; (2) lysosomolytic agents can be incorporated to reduce degradation of the *DNA* in the endosomal and lysosomal compartments; (3) other bioactive agents or multiple plasmids can be co-encapsulated; (4) bioavailability of the *DNA* can be improved because of protection from serum nuclease degradation by the polymeric matrix; (5) the nanosphere can be lyophilized for storage without loss of...

1/3,K/16 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

11326624 BIOSIS NO.: 199800107956
Recombinant *adenovirus* can be encapsulated and released from *coacervate* microspheres in a time-dependent fashion.
AUTHOR: Kalyanasundaram S(a); Feinstein Sharon; Nicholson J P; Leong K W(a); Garver R I Jr
AUTHOR ADDRESS: (a)Johns Hopkins Univ., Dep. Biomed. Eng., Baltimore, MD** USA
JOURNAL: Cancer Gene Therapy 4 (6 CONF. SUPPL.):pS23 Nov.-Dec., 1997
CONFERENCE/MEETING: Sixth International Conference on Gene Therapy of Cancer San Diego, California, USA November 20-22, 1997
ISSN: 0929-1903
RECORD TYPE: Citation
LANGUAGE: English

Recombinant *adenovirus* can be encapsulated and released from *coacervate* microspheres in a time-dependent fashion.

1/3,K/17 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

09995583 BIOSIS NO.: 199598450501
Experimental retracement of the origins of a protocell: It was also a protoneuron.
AUTHOR: Fox Sidney W(a); Bahn Peter R; Dose Klaus; Harada Kaoru; Hsu Laura; Ishima Yoshio; Jungck John; Kendrick Jean; Krampitz Gottfried; Lacey James C Jr; Matsuno Koichiro; Melius Paul; Middlebrook Mavis; Nakashima Tadayoshi; Pappelis Aristotel; Pol Alexander; Rohlfing Duane L; Vegotsky Allen; Waehneldt Thomas V; Wax H; Yu Bi
AUTHOR ADDRESS: (a)Coastal Res. Dev. Inst., LSB 124, Univ. South Alabama, Mobile, AL 36688**USA
JOURNAL: Journal of Biological Physics 20 (1-4):p17-36
ISSN: 0092-0606
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Although Oparin used *coacervate* droplets from two or more types of polymer to model the first cell, he hypothesized homacervation from protein, consistent with Pasteur and Darwin. Herrera made...

...protoneurons and networks thereof, and numerous industrial applications of thermal polyamino acids. Life itself has thus been reaffirmed to be rooted in protein, not in *DNA* nor *RNA*, which are however crucial to inheritance in modern life as "instruction manuals' (Komberg). Recognition of the advances have been considerably delayed by the deeply held assumption that life began by chance from random polymerization of amino acids, in contrast to the experimental findings. The concepts of *DNA*/*RNA*-first and protein-first are reconciled by a rise-and-fall progression as often seen in biochemical and biological evolution. The fact that amino acids...

1/3,K/18 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

09226988 BIOSIS NO.: 199497235358
Gelatin microspheres as a new approach for the controlled delivery of synthetic oligonucleotides and PCR-generated DNA fragments.
AUTHOR: Cortesi Rita; Esposito Elisabetta; Menegatti Enea; Gambari Roberto;

Nastruzzi Claudio(a)
AUTHOR ADDRESS: (a)Dep. Pharmaceutical Sci., Ferrara Univ., Via Fossato di Mortara 19, I-44100 Ferrara**Italy
JOURNAL: International Journal of Pharmaceutics (Amsterdam) 105 (2):p 181-186 1994
ISSN: 0378-5173
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: length, prepared by the polymerase chain reaction (PCR) mimicking a region of the HIV-1 LTR (dsDNA-144). Spherical gelatin microspheres were obtained by a *coacervation* method, showing a high percentage of encapsulation yields (over 85%). Size distribution analysis of the microspheres produced resulted in an average diameter of 22 mu...

...a flow-through cell method. The chemical stability of dsDNA-144 to the encapsulation procedure steps was in addition demonstrated by PCR amplification of the *DNA* eluted from the gelatin microspheres. The reported results indicate that gelatin-based microspheres offer excellent potential as carrier systems of the in vivo administration of both single- and double-stranded *DNA* molecules.

1/3,K/19 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06279448 BIOSIS NO.: 000086113631
USE OF CRITICAL POINT POLYACRYLAMIDE SOLS IN THERMAL DENATURATION EXPERIMENTS WITH CHROMATIN AT PHYSIOLOGICAL IONIC STRENGTH
AUTHOR: RIEHM M R; HARRINGTON R E
AUTHOR ADDRESS: DEP. BIOCHEM., UNIV. NEVADA, RENO, NEVADA 89557.
JOURNAL: ANAL BIOCHEM 172 (2). 1988. 296-303. 1988
FULL JOURNAL NAME: Analytical Biochemistry
CODEN: ANBCA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

...ABSTRACT: liter-1, by mild heating. We find that chromatin samples mixed with these sols induce the sol to gel transition in a process of complex *coacervation*. In this state, salt insoluble chicken erythrocyte chromatin is stabilized against large scale aggregation and precipitation during thermal denaturation at physiological sodium ion concentrations. The hyperchromic melting behavior of *DNA* in polyacrylamide sols is reproducible and consistent throughout a wide range of sodium chloride concentrations. Empirical spectroscopic techniques are discussed which isolate temperature-dependent hyperchromic signals at 260 nm due to conformational changes of *DNA* in chromatin and local environmental changes which promote anomalous light scattering.

1/3,K/20 (Item 12 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

02935671 BIOSIS NO.: 000069043789
THE EVOLUTION OF BIOLOGICAL MACRO MOLECULES 1. PHYSICOCHEMICAL SELF ORGANIZATION
AUTHOR: EBELING W; FEISTEL R
AUTHOR ADDRESS: SEKT. PHYS., WILHELM-PIECK-UNIV., UNIVERSITAETSPLATZ 3, DDR-25 ROSTOCK, E. GER.
JOURNAL: STUD BIOPHYS 75 (2). 1979. 131-146. 1979
FULL JOURNAL NAME: Studia Biophysica
CODEN: STBIB
RECORD TYPE: Abstract

LANGUAGE: ENGLISH

...ABSTRACT: of biogenesis is presented which combines the basic ideas of Oparin and Eigen. Based on this model the hypothesis is developed that the competition of *coacervate*-microreactors played an important role in the primordial selection processes. Further binary catalytic cycles, catalytic cascades and *RNA*-replicase cycles are the most probable precursors for the evolution of more complex structures.
DESCRIPTORS: MATHEMATICAL MODEL *COACERVATE* MICRO REACTOR COMPETITION PRIMORDIAL SELECTION BINARY CATALYTIC CYCLE CATALYTIC CASCADE *RNA* REPLICASE CYCLE

1/3,K/21 (Item 13 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

02583343 BIOSIS NO.: 000017031401
A MICRO ENCAPSULATION SYSTEM FOR THE PROTECTION OF MICROBIAL INSECTICIDES FROM SUN LIGHT INACTIVATION
AUTHOR: ANDREWS R E; SPENCE K D
JOURNAL: ABSTR ANNU MEET AM SOC MICROBIOL (79). 1979 236 1979
FULL JOURNAL NAME: Abstracts of the Annual Meeting of the American Society for Microbiology
CODEN: ASMAC
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation

DESCRIPTORS: ABSTRACT *RNA* PROTEIN *COACERVATE* MICRO BEADS SPORES

1/3,K/22 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

01911674 BIOSIS NO.: 000062001768
DEPENDENCE OF THE CONTENT AND CONCENTRATION OF ENZYMATIC OXIDATION PRODUCTS ON SIZE OF COACERVATE DROPLETS
AUTHOR: MAMONTOVA T V; EVREINOVA T N; KHRUST YU R
JOURNAL: DOKL AKAD NAUK SSSR SER BIOL 223 (4). 1975 1020-1022. 1975
CODEN: DASBA
RECORD TYPE: Abstract

ABSTRACT: Quantitative measurements were made of stabilizing oxidation products in individual *coacervate* droplets and the relation between the size of the droplets and their content of oxidized compounds was established. Protein-carbohydrate *coacervate* systems consisting of histone and gum arabic and protein-nucleic acid *coacervate* systems consisting of histone and *DNA* were investigated. The content and concentration of oxidized compounds was higher in the *coacervate* droplets consisting of *DNA* and histone than in droplets of gum arabic and histone of the same size. Protein-nucleic acid *coacervate* droplets have a slightly greater ability to concentrate products of enzymatic oxidation. The stable *coacervate* systems obtained broaden their use as precellular models.

1/3,K/23 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11059034 EMBASE No: 2001068392
Chitosan-DNA nanoparticles as gene carriers: Synthesis, characterization and transfection efficiency
Mao H.-Q.; Roy K.; Troung-Le V.L.; Janes K.A.; Lin K.Y.; Wang Y.; August J.T.; Leong K.W.

H.-Q. Mao, Johns Hopki[redacted]Singapore, 10 Medical Drive, S[redacted]apore 117597 Singapore
AUTHOR EMAIL: hmao@jhs.com.sg
Journal of Controlled Release (J. CONTROL. RELEASE) (Netherlands) 23 FEB 2001, 70/3 (399-421)
CODEN: JCREE ISSN: 0168-3659
PUBLISHER ITEM IDENTIFIER: S0168365900003618
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 48

Chitosan-*DNA* nanoparticles were prepared using a complex *coacervation* process. The important parameters for the nanoparticle synthesis were investigated, including the concentrations of *DNA*, chitosan and sodium sulfate, temperature of the solutions, pH of the buffer, and molecular weights of chitosan and *DNA*. At an amino group to phosphate group ratio (N/P ratio) between 3 and 8 and a chitosan concentration of 100 mug/ml, the size of particles was optimized to (similar)100-250 nm with a narrow distribution, with a composition of 35.6 and 64.4% by weight for *DNA* and chitosan, respectively. The surface charge of these particles was slightly positive with a zeta potential of +12 to +18 mV at pH lower than 6.0, and became nearly neutral at pH 7.2. The chitosan-*DNA* nanoparticles could partially protect the encapsulated plasmid *DNA* from nuclease degradation as shown by electrophoretic mobility analysis. The transfection efficiency of chitosan-*DNA* nanoparticles was cell-type dependent. Typically, it was three to four orders of magnitude, in relative light units, higher than background level in HEK293 cells, and two to ten times lower than that achieved by Lipofectamine(TM)-*DNA* complexes. The presence of 10% fetal bovine serum did not interfere with their transfection ability. Chloroquine could be co-encapsulated in the nanoparticles at 5...

1/3,K/24 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

10659656 EMBASE No: 2000135122
Antigen-specific induction of peripheral T cell tolerance in vivo by codelivery of DNA vectors encoding antigen and Fas ligand
Georgantas III R.W.; Leong K.W.; August J.T.
Dr. R.W. Georgantas III, Biophysics Building, 725 North Wolfe Street, Baltimore, MD 21205 United States
Human Gene Therapy (HUM. GENE THER.) (United States) 10 APR 2000, 11/6 (851-858)
CODEN: HGTHE ISSN: 1043-0342
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 50

...FasL within individual antigen-presenting cells would lead to antigen-specific activation of T cells and to their consequent deletion by FasL-mediated AICD. A *DNA*-gelatin *coacervate* containing transferrin cell ligand, calcium, and the lysosomatropic agent chloroquine, a formulation previously shown to achieve high-level transfection of immune and muscle cells in vivo, was used to codeliver plasmids encoding FasL and antigen. Mice developed a strong cytolytic T cell response to beta-Gal when injected with *DNA* encoding beta-galactosidase (LacZ) model antigen, either as naked *DNA* or *DNA* nanoparticles, but failed to respond when there was concomitant injection of nanoparticles containing both the LacZ and murine FasL *DNA* vectors. This loss of T cell response was systemic, specific for beta-Gal, complete when nonoparticles were administered before antigen challenge, and decreased the T cell response from prior immunization with LacZ *DNA*. In effect, this 'tolerization' injection induced antigen-specific peripheral tolerance in study mice, and represents a possible approach to the treatment of autoimmune diseases and...

1/3,K/25 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

07820290 EMBASE No: 1999292739
Gene transfer by DNA-gelatin nanospheres
Truong-Le V.L.; Walsh S.M.; Schweibert E.; Mao H.-Q.; Guggino W.B.; August J.T.; Leong K.W.
J.T. August, Dept. of Pharmacology/Molec. Sci., Johns Hopkins School of Medicine, Baltimore, MD 21205 United States
Archives of Biochemistry and Biophysics (ARCH. BIOCHEM. BIOPHYS.) (United States) 01 JAN 1999, 361/1 (47-56)
CODEN: ABBIA ISSN: 0003-9861
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 43

A *DNA* and gelatin nanoparticle *coacervate* containing chloroquine and calcium, and with the cell ligand transferrin covalently bound to the gelatin, has been developed as a gene delivery vehicle. In this study, the *coacervation* conditions which resulted in the formation of distinct nanoparticles are defined. Nanospheres formed within a narrow range of *DNA* concentrations and achieved incorporation of more than 98% of the *DNA* in the reaction. Crosslinking of gelatin to stabilize the particles does not effect the electrophoretic mobility of the *DNA*. *DNA* in the nanosphere is partially resistant to digestion with concentrations of DNase I that result in extensive degradation of free *DNA* but is completely degraded by high concentrations of DNase. Optimum cell transfection by nanosphere *DNA* required the presence of calcium and nanospheres containing transferrin. The biological integrity of the nanosphere *DNA* was demonstrated with a model system utilizing *DNA* encoding the cystic fibrosis transport regulator (CFTR). Transfection of cultured human tracheal epithelial cells (9HTEo) with nanospheres containing this plasmid resulted in CFTR expression in...

1/3,K/26 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

07392534 EMBASE No: 1998307938
Controlled gene delivery by DNA-gelatin nanospheres
Truong-Le V.L.; August J.T.; Leong K.W.
Dr. K.W. Leong, Department of Biomedical Engineering, School of Medicine, The Johns Hopkins University, 725 N. Wolfe St, Baltimore, MD 21205 United States
Human Gene Therapy (HUM. GENE THER.) (United States) 10 AUG 1998, 9/12 (1709-1717)
CODEN: HGTHE ISSN: 1043-0342
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 37

A novel system for gene delivery, based on the use of *DNA*-gelatin nanoparticles (nanospheres) formed by salt-induced complex *coacervation* of gelatin and plasmid *DNA*, has been developed. These particles were spherical, with a size range of 200-700 nm, contained 25-30% (w/w) *DNA*, and were stabilized by cross-linking of gelatin. As a consequence of being controlled by the cross-linking density of the gelatin matrix, the average release rate of *DNA* from nanospheres synthesized under standard conditions was 2.2%/day in serum. Nanosphere *DNA* incubated in bovine serum was more resistant to nuclease digestion than was naked *DNA*. Various bioactive agents could be encapsulated in the nanospheres by ionic interaction with the matrix components, physical entrapment, or covalent conjugation. Transfection of cultured cells...

...nanospheres containing 1 mug of a beta-galactosidase plasmid was greater and more prolonged than was observed after injection of an equal amount of naked *DNA* or *DNA* complexed with Lipofectamine.

1/3,K/27 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

07274953 EMBASE No: 1998160228
DNA-polycation nanospheres as non-viral gene delivery vehicles
Leong K.W.; Mao H.-Q.; Truong-Le V.L.; Roy K.; Walsh S.M.; August J.T.
K.W. Leong, Department of Biomedical Engineering, Johns Hopkins University, 726 Ross, Baltimore, MD 21205 United States
AUTHOR EMAIL: kleong@bme.jhu.edu
Journal of Controlled Release (J. CONTROL. RELEASE) (Netherlands) 30 APR 1998, 53/1-3 (183-193)
CODEN: JCREE ISSN: 0168-3659
PUBLISHER ITEM IDENTIFIER: S0168365997002526
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 26

Nanospheres synthesized by salt-induced complex *coacervation* of cDNA and polycations such as gelatin and chitosan were evaluated as gene delivery vehicles. *DNA*-nanospheres in the size range of 200-750 nm could transfect a variety of cell lines. Although the transfection efficiency of the nanospheres was typically...

...phosphate controls in cell culture, the beta-gal expression in muscle of BALB/c mice was higher and more sustained than that achieved by naked *DNA* and lipofectamine complexes. This gene delivery system has several attractive features: (1) ligands can be conjugated to the nanosphere for targeting or stimulating receptor-mediated endocytosis; (2) lysosomolytic agents can be incorporated to reduce degradation of the *DNA* in the endosomal and lysosomal compartments; (3) other bioactive agents or multiple plasmids can be co- encapsulated; (4) bioavailability of the *DNA* can be improved because of protection from serum nuclease degradation by the polymeric matrix; (5) the nanosphere can be lyophilized for storage without loss of...

1/3,K/28 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

06237497 EMBASE No: 1995274686
Gene transfer by gelatin-*DNA* *coacervate*
Truong-Le V.L.; Walsh S.M.; August J.T.; Leong K.W.
Dept. Pharmacol. Molecular Sciences, The Johns Hopkins University,Baltimore, MD 21205 United States
Proceedings of the Controlled Release Society (PROC. CONTROL. RELEASE SOC.) (United States) 1995, -/22 (466-467)
CODEN: 58GMA ISSN: 1022-0178
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH

Gene transfer by gelatin-*DNA* *coacervate*

1/3,K/29 (Item 7 from file: 73)
DIALOG(R)File 73:EMBASE

05690731 EMBASE No: 1994095476

Gelatin microspheres as a new approach for the controlled delivery of synthetic oligonucleotides and PCR-generated DNA fragments

Cortesi R.; Esposito E.; Menegatti E.; Gambari R.; Nastruzzi C.
Department Pharmaceutical Sciences, Ferrara University, Via Fossato di Mortara 19,I-44100 Ferrara Italy

International Journal of Pharmaceutics (INT. J. PHARM.) (Netherlands) 1994, 105/2 (181-186)
CODEN: IJPHD ISSN: 0378-5173
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...length, prepared by the polymerase chain reaction (PCR) mimicking a region of the HIV-1 LTR (dsDNA-144). Spherical gelatin microspheres were obtained by a *coacervation* method, showing a high percentage of encapsulation yields (over 85%). Size distribution analysis of the microspheres produced resulted in an average diameter of 22 mum...

...a flow-through cell method. The chemical stability of dsDNA-144 to the encapsulation procedure steps was in addition demonstrated by PCR amplification of the *DNA* eluted from the gelatin microspheres. The reported results indicate that gelatin-based microspheres offer excellent potential as carrier systems for the in vivo administration of both single- and double-stranded *DNA* molecules.

1/3,K/30 (Item 8 from file: 73)

03756709 EMBASE No: 1988206145

Use of critical point polyacrylamide sols in thermal denaturation experiments with chromatin at physiological ionic strength

Riehm M.R.; Harrington R.E.
Department of Biochemistry, University of Nevada, Reno, NV 89557 United States

Analytical Biochemistry (ANAL. BIOCHEM.) (United States) 1988, 172/2 (296-303)
CODEN: ANBCA ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...sup 1, by mild heating. We find that chromatin samples mixed with these sols induce the sol to gel transition in a process of complex *coacervation*. In this state, salt insoluble chicken erythrocyte chromatin is stabilized against large scale aggregation and precipitation during thermal denaturation at physiological sodium ion concentrations. The hyperchromic melting behavior of *DNA* in polyacrylamide sols is reproducible and consistent throughout a wide range of sodium chloride concentrations. Empirical spectroscopic techniques are discussed which isolate temperature-dependent hyperchromic signals at 260 nm due to conformational changes of *DNA* in chromatin and local environmental changes which promote anomalous light scattering.

?ds

```
Set     Items   Description
S1         30   (COACERVATE OR COACERVATION) (S) (ADENOVIRUS OR VECTOR OR -
               DNA OR RNA)
S2          3   S1 AND (MICROSPHERE)
S3          2   RD (unique items)
S4         17   RD S1 (unique items)
?s (coacervate or coacervation) (s) (virus)
             437  COACERVATE
             775  COACERVATION
         1118303  VIRUS
      S5       5  (COACERVATE OR COACERVATION) (S) (VIRUS)
?rd
```

...completed examining records
S6 2 RD (unique items)
?t s6/3,k/all

6/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11262888 21290915 PMID: 11397576
Release kinetics and immunogenicity of parvovirus microencapsulated in PLA/PLGA microspheres.
Palinko-Biro E; Ronaszeki G; Merkle H P; Gander B
Ceva-Phylaxia Veterinary Biologicals Company, Szallas utca 5, Budapest, 1107, Hungary.
International journal of pharmaceutics (Netherlands) Jun 19 2001, 221 (1-2) p153-7, ISSN 0378-5173 Journal Code: 7804127
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... Cairina moschata) and goose. Inactivated duck parvovirus suspension was microencapsulated into 14-17 kDa poly(lactide) (PLA) and poly(lactide-co-glycolide) (PLGA50:50H) by *coacervation* . The in vitro antigen release from individual and mixed PLA and PLGA50:50H microspheres (MS) was biphasic with an initial lag-phase of approx. 10...

... 1+3, the release kinetics could be altered and controlled efficiently. The antigen-loaded MS were injected subcutaneously into ducks. The immune response, expressed as *virus* neutralisation (VN) titres, after single administration of MS was modest, i.e. below 200 over the 6 weeks tested, unless the animals were pre-immunised...

6/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10233054 99210253 PMID: 10195878
Coacervate microspheres as carriers of recombinant adenoviruses.
Kalyanasundaram S; Feinstein S; Nicholson J P; Leong K W; Garver R I
Department of Biomedical Engineering, Johns Hopkins University, Baltimore, Maryland 21205, USA.
Cancer gene therapy (UNITED STATES) Mar-Apr 1999, 6 (2) p107-12, ISSN 0929-1903 Journal Code: 9432230
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

...for bolus administration, both of which limit the efficiency of target tissue infection. As a first step toward overcoming these limitations, rAds were encapsulated in *coacervate* microspheres comprised of gelatin and alginate followed by stabilization with calcium ions. Ultrastructural evaluation showed that the microspheres formed in this manner were 0.8...

... evenly distributed. The microspheres achieved a sustained release of adenovirus with a nominal loss of bioactivity. The pattern of release and the total amount of *virus* released was modified by changes in microsphere formulation. Administration of the adenovirus-containing microspheres to human tumor nodules engrafted in mice showed that the viral transgene was transferred to the tumor cells. It is concluded that *coacervate* microspheres can be used to encapsulate bioactive rAd and release it in a time-dependent manner.
?ds

Set	Items	Description
S1	30	(COACERVATE OR COACERVATION) (S) (ADENOVIRUS OR VECTOR OR -

DNA OR RNA)
S2 3 S1 AND (MICROSPHERE)
S3 2 RD (unique items)
S4 17 RD S1 (unique items)
S5 5 (COACERVATE OR COACERVATION) (S) (VIRUS)
S6 2 RD (unique items)
?s (gene (w) delivery) and (coacervate or coacervation)
1855136 GENE
343781 DELIVERY
8246 GENE(W)DELIVERY
437 COACERVATE
775 COACERVATION
S7 11 (GENE (W) DELIVERY) AND (COACERVATE OR COACERVATION)
?rd
...completed examining records
S8 5 RD (unique items)
?t s8/3,k/all

8/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10106534 99102035 PMID: 9882427
Gene transfer by DNA-gelatin nanospheres.
Truong-Le V L; Walsh S M; Schweibert E; Mao H Q; Guggino W B; August J T; Leong K W
Department of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine, Baltimore, Maryland, 21205, USA.
Archives of biochemistry and biophysics (UNITED STATES) Jan 1 1999, 361 (1) p47-56, ISSN 0003-9861 Journal Code: 0372430
Contract/Grant No.: 1 RO1 A141908; PHS; CA 68011; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A DNA and gelatin nanoparticle *coacervate* containing chloroquine and calcium, and with the cell ligand transferrin covalently bound to the gelatin, has been developed as a *gene* *delivery* vehicle. In this study, the *coacervation* conditions which resulted in the formation of distinct nanoparticles are defined. Nanospheres formed within a narrow range of DNA concentrations and achieved incorporation of more...

8/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09999784 98412957 PMID: 9741926
DNA-polycation nanospheres as non-viral *gene* *delivery* vehicles.
Leong K W; Mao H Q; Truong-Le V L; Roy K; Walsh S M; August J T
Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD 21205, USA. kleong@bme.jhu.edu
Journal of controlled release : official journal of the Controlled Release Society (NETHERLANDS) Apr 30 1998, 53 (1-3) p183-93, ISSN 0168-3659 Journal Code: 8607908
Contract/Grant No.: CA68011; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

DNA-polycation nanospheres as non-viral *gene* *delivery* vehicles.
Nanospheres synthesized by salt-induced complex *coacervation* of cDNA and polycations such as gelatin and chitosan were evaluated as *gene* *delivery* vehicles. DNA-nanospheres in the size range of 200-750 nm could transfect a variety of cell lines. Although the transfection efficiency of the nanospheres...

... the beta-gal expression in muscle of BALB/c mice was higher and more sustained than that achieved by naked DNA and lipofectamine complexes. This *gene* *delivery* system has several attractive features: (1) ligands can be conjugated to the nanosphere for targeting or stimulating receptor-mediated endocytosis; (2) lysosomolytic agents can be...

8/3,K/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09960721 98386035 PMID: 9721081
Controlled *gene* *delivery* by DNA-gelatin nanospheres.
Truong-Le V L; August J T; Leong K W
Department of Pharmacology and Molecular Sciences, The Johns Hopkins University School of Medicine, Baltimore, MD 21205, USA.
Human gene therapy (UNITED STATES) Aug 10 1998, 9 (12) p1709-17, ISSN 1043-0342 Journal Code: 9008950
Contract/Grant No.: 1-ROI-AI41908; AI; NIAID; AI42718; AI; NIAID; P50 CA62924; CA; NCI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Controlled *gene* *delivery* by DNA-gelatin nanospheres.
A novel system for *gene* *delivery*, based on the use of DNA-gelatin nanoparticles (nanospheres) formed by salt-induced complex *coacervation* of gelatin and plasmid DNA, has been developed. These particles were spherical, with a size range of 200-700 nm, contained 25-30% (w/w...

8/3,K/4 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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13018727 BIOSIS NO.: 200100225876
Chitosan-DNA nanoparticles as gene carriers: Synthesis, characterization and transfection efficiency.
AUTHOR: Mao Hai-Quan(a); Roy Krishnendu; Troung-Le Vu L; Janes Kevin A; Lin Kevin Y; Wang Yan; August J Thomas; Leong Kam W
AUTHOR ADDRESS: (a)Johns Hopkins Singapore, 10 Medical Drive, Singapore, 117597: hmao@jhs.com.sg, kleong@bme.jhu.edu**Singapore
JOURNAL: Journal of Controlled Release 70 (3):p399-421 23 February, 2001
MEDIUM: print
ISSN: 0168-3659
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Chitosan-DNA nanoparticles were prepared using a complex *coacervation* process. The important parameters for the nanoparticle synthesis were investigated, including the concentrations of DNA, chitosan and sodium sulfate, temperature of the solutions, pH of...
...METHODS & EQUIPMENT: *gene* *delivery*--

8/3,K/5 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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12525401 BIOSIS NO.: 200000278903
***Gene* *delivery* system.**
AUTHOR: Roy Krishnendu(a); Mao Hai-Quan; Truong Vu L; August Thomas; Leong Kam W
AUTHOR ADDRESS: (a)Ellicot City, MD**USA